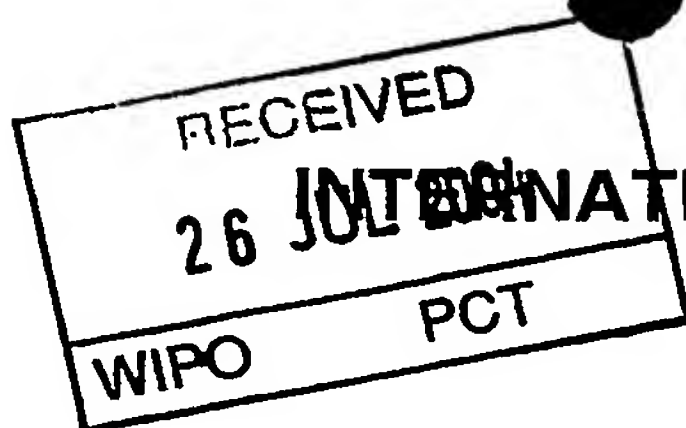


PATENT COOPERATION TREATY

PCT



INTERNATIONAL PRELIMINARY EXAMINATION REPORT
(PCT Article 36 and Rule 70)

Applicant's or agent's file reference P81795PC00/ACC	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/EP 03/10245	International filing date (day/month/year) 15.09.2003	Priority date (day/month/year) 16.09.2002
International Patent Classification (IPC) or both national classification and IPC H04L25/02		
Applicant TELEFONAKTIEBOLAGET L M ERICSON et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 5 sheets, including this cover sheet.
☐ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).
These annexes consist of a total of sheets.

3. This report contains indications relating to the following items:

I	<input checked="" type="checkbox"/>	Basis of the opinion
II	<input type="checkbox"/>	Priority
III	<input type="checkbox"/>	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
IV	<input type="checkbox"/>	Lack of unity of invention
V	<input checked="" type="checkbox"/>	Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
VI	<input type="checkbox"/>	Certain documents cited
VII	<input type="checkbox"/>	Certain defects in the international application
VIII	<input type="checkbox"/>	Certain observations on the international application

Date of submission of the demand 29.03.2004	Date of completion of this report 23.07.2004
Name and mailing address of the International preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer Martínez Martínez, V Telephone No. +49 89 2399-8017 

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/EP 03/10245

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, Pages

1-9 as originally filed

Claims, Numbers

1-10 as originally filed

Drawings, Sheets

1/1 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

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EXAMINATION REPORT**

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5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-10
	No: Claims	
Inventive step (IS)	Yes: Claims	1-10
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-10
	No: Claims	

2. Citations and explanations

see separate sheet

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1 Reference is made to the following document:

D1: LINDOFF B: "Using a direct conversion receiver in edge terminals - a new DC offset compensation algorithm" 11TH IEEE INTERNATIONAL SYMPOSIUM ON PERSONAL INDOOR AND MOBILE RADIO COMMUNICATIONS, 18 September 2000 (2000-09-18), - 21 September 2000 (2000-09-21) XP010520777 London, UK,

2. The independent claims 1 and 8 contain terms which have no well-recognised meaning in the technical field of channel estimation, leaving the reader in doubt as to the meaning of the technical features to which they refer and thereby rendering the definition of the subject-matter of said claims unclear, Article 6 PCT. These terms are the following: "trend matrix", "path-trend vector" and "neutralized regression matrix".
3. Despite of the clarity problems cited above, if the unclear terms are interpreted in the light of the description (see pages 5 to 8) the claims contain new, inventive and industrially applicable subject matter according to Article 33 (2), (3) and (4) PCT. The details are given in the following.
 - 3.1 The application relates to a method (claims 1 and 8) to estimate and remove the DC offset in a GSM/EDGE receiver.
 - 3.2 Such a method are disclosed by D1, which is considered the closest prior art.
 - 3.3 The subject-matter of independent claims essentially differs from D1, in that D1 does not use "neutralized" (meaning DC-free) inputs and outputs for compensation of the DC offset. D1 represents the prior art solution to the problem which consists on estimating jointly DC offset and radio channel.
 - 3.4 The problem solved by these new features can be considered as how to avoid the computational complexity which is inherent to the joint estimation method. The solution proposed by the application allows for a separate estimation with the additional advantage that the path trend vectors can be precalculated.
 - 3.5 The new features are neither disclosed nor rendered obvious by any of the documents cited in the International Search Report. There are no indications that

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a skilled person would address the problem. Therefore, the present solution should be considered as inventive.

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